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NAVAL OCEANOGRAPHIC OFFICE NSTL STATION MS
SURFACE CURRENTS, GULF OF ALASKA. (U)

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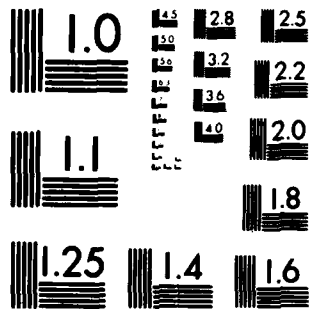
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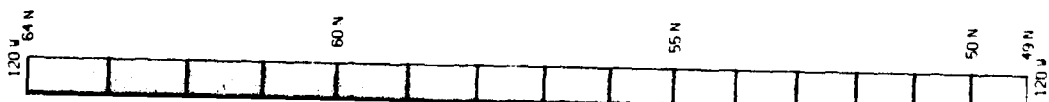
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Surface Currents

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SURFACE CURRENTS

GULF OF ALASKA



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**NAVAL OCEANOGRAPHIC OFFICE
WASHINGTON, D. C. 20373**

ACKNOWLEDGMENTS

Messrs. Raymond J. Beauchesne* and William E. Boisvert made major contributions to this atlas.

*Mr. Beauchesne presently is employed by the Bureau of Naval Personnel.

FOREWORD

THIS ATLAS, ONE IN A SERIES OF 43 REGIONAL SURFACE CURRENT ATLASES, IS PRODUCED TO FULFILL A NEED OF NAVY PLANNING STAFFS AND THE SCIENTIFIC AND INDUSTRIAL COMMUNITIES FOR THE LATEST AVAILABLE OCEAN SURFACE CURRENT DATA. THESE ATLASES ADD TO THE WEALTH OF NAUTICAL INFORMATION UPON WHICH OPERATIONAL PLANNING, NAVIGATIONAL SAFETY, AND SHIPPING ECONOMY DEPEND. RAPID PRODUCTION AND WIDE DISSEMINATION OF THIS ATLAS ARE MADE POSSIBLE BY THE LATEST COMPUTER TECHNIQUES.

THE CONSTANT IMPROVEMENT IN THE QUALITY OF SURFACE CURRENT DATA RECEIVED OVER THE YEARS IS MADE POSSIBLE LARGELY BY THE MORE THOROUGH REPORTS OF VOLUNTARY OBSERVERS IN RECENT YEARS. THE DEFENSE MAPPING AGENCY, THE OCEANOGRAPHIC OFFICE, AND THE USER OF THE ATLASES RELY ON THE PERSONAL OBSERVATIONS OF THE MAN WHO HAS "BEEN THERE." MARINERS, IN REPORTING THEIR OBSERVATIONS, RENDER A SERVICE NOT ONLY TO THEMSELVES BUT ALSO TO ALL "WHO GO DOWN TO THE SEA IN SHIPS." WITH THE ADVENT OF NUCLEAR POWER, ELECTRONIC NAVIGATION AIDS, AND 300,000-TON SHIPS, UP-TO-DATE, RAPIDLY DISSEMINATED ENVIRONMENTAL AND NAVIGATIONAL INFORMATION HAS BECOME INCREASINGLY IMPORTANT.

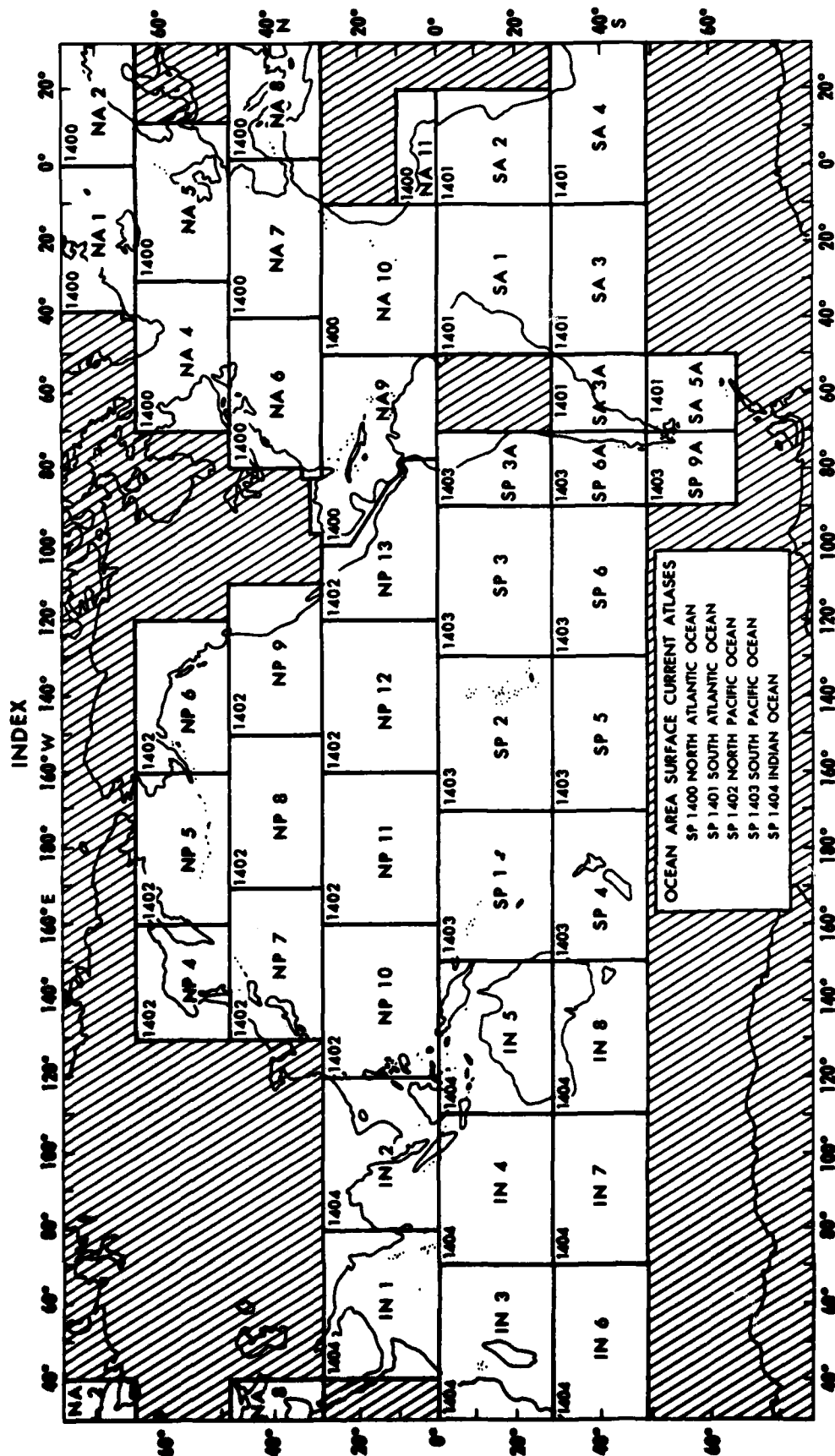
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THESE GRAPHICS MAY NOT BE TRULY REPRESENTATIVE OF THE ACTUAL FLOW IN SUCH AREAS AS THE NORTH SEA, PERSIAN GULF, GULF OF THAILAND, AND YELLOW SEA WHERE CURRENTS ARE SIGNIFICANTLY TIDAL. FOR SUCH AREAS, OTHER SOURCES DESCRIBING PREDICTABLE HOURLY CHANGES OF TIDAL CURRENTS SHOULD BE CONSULTED.

THIS SERIES OF COMPUTERIZED ATLASES REPLACES THE OLD HYDROGRAPHIC OFFICE ATLASES OF SURFACE CURRENTS (NOP 566, 568, 569, 570) WHICH WERE MANUALLY COMPILLED FROM DATA OBTAINED DURING THE PERIOD 1903 - 1934. THESE NEW ATLASES CONFORM TO THE STANDARD NAVY OCEAN AREA AND REGION INDEX LIMITS SHOWN BELOW:

RECENT IMPROVEMENTS IN THE DATA FILE ASSURE THE INCLUSION OF THE LATEST, HIGH QUALITY SURFACE CURRENT DATA AVAILABLE. THE FILE NOW CONTAINS MORE THAN 4,200,000 OBSERVATIONS AND A GENERAL UPDATE OF THE FILE WILL BE MADE



The Surface Current Data File, from which these atlases are derived, consists primarily of data from drift observations. These data were collected by the United States, the Netherlands, Japan, Britain, France, and the United States. The file is supplemented by data from the International Geophysical Year (IGY) observations, mostly Japanese. The file spans the period from the early 1950's to the present. The earliest observations were collected by the Netherlands and Great Britain; those of the 1940's through the 1950's are primarily United States data.

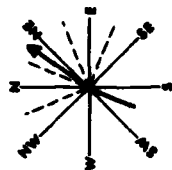
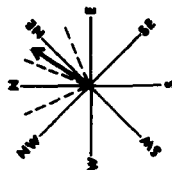
The quality of this data file is considerably higher than that of the other data files. The high quality is largely caused for deliberate, observations taken under adverse conditions have been eliminated. The high quality of the data is also caused by the fact that observations have been eliminated which are not representative of the behavior of the observer; successful identifications of net and drift were edited; and observations with erroneous locations (mostly observations on land) were being eliminated. The accepted data are considered most useful when used collectively as in summaries where a number of observations share trends.

The use of Δ (distance) and drift (speed) are governed by the arquerator from the difference between the last observation (last obs) and the next observation (next obs). The drift is the difference between the last and next observation divided by the difference between the last and next observation. The drift can be determined along any straight line track and includes all features which cause changes in the IM position. When a fix is obtained, the current distance (distance) is from the IM position to the fix; the drift (speed) is equal to the distance (distance) divided by the time (time) between the IM and the fix, divided by the number of hours between the last fix. For successive observations, the TO POSITION of one observation becomes the FROM POSITION of the next observation.

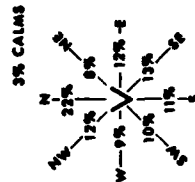
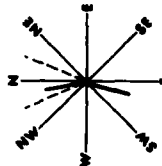
A-10 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 A-11 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 B-10 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 B-11 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 C-10 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 C-11 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 D-10 CURVED STRINGS, 10 FT., SPEED, 12 IN.
 D-11 CURVED STRINGS, 10 FT., SPEED, 12 IN.

Data Presentation

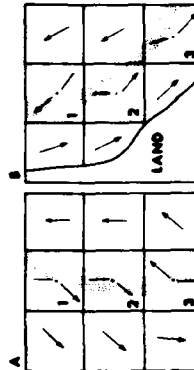
The following legend shows two types of surface current presentations by 1° quadrangle, type 1 with 12 or more observations and type 2 with fewer than 12 observations. Where there are 11 or fewer observations within a 1° quadrangle, the total number of observations is shown within the 90° quadrant containing the observations.

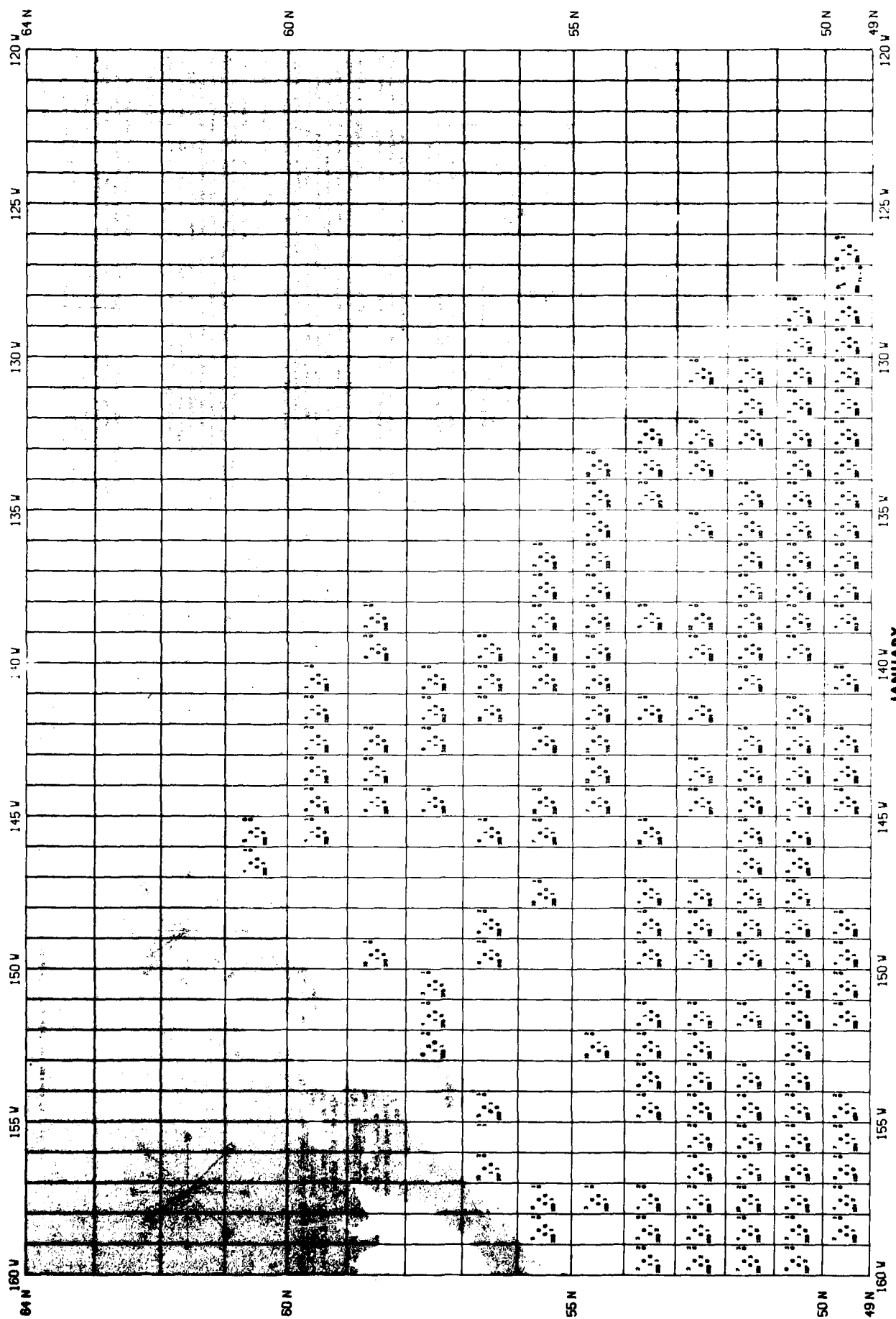


- (1) Persistent Current - 60 percent or more of all observations fall within a 45° sector of the 8-point compass.
- (2) Prevailing Current - 70 percent or more of all observations fall within two adjacent 45° sectors.
- (3) Primary Current - 50 percent or more of all observations fall within three adjacent 45° sectors.
- (a) Secondary Direction - 20 percent or more of all observations fall within a 45° sector, and the two resultant vector directions are separated by more than 90° of 85°.
- (b) Secondary Direction - 20 percent or more of all observations fall within a 45° sector, and the two resultant vector directions are separated by more than 90° of 85°.

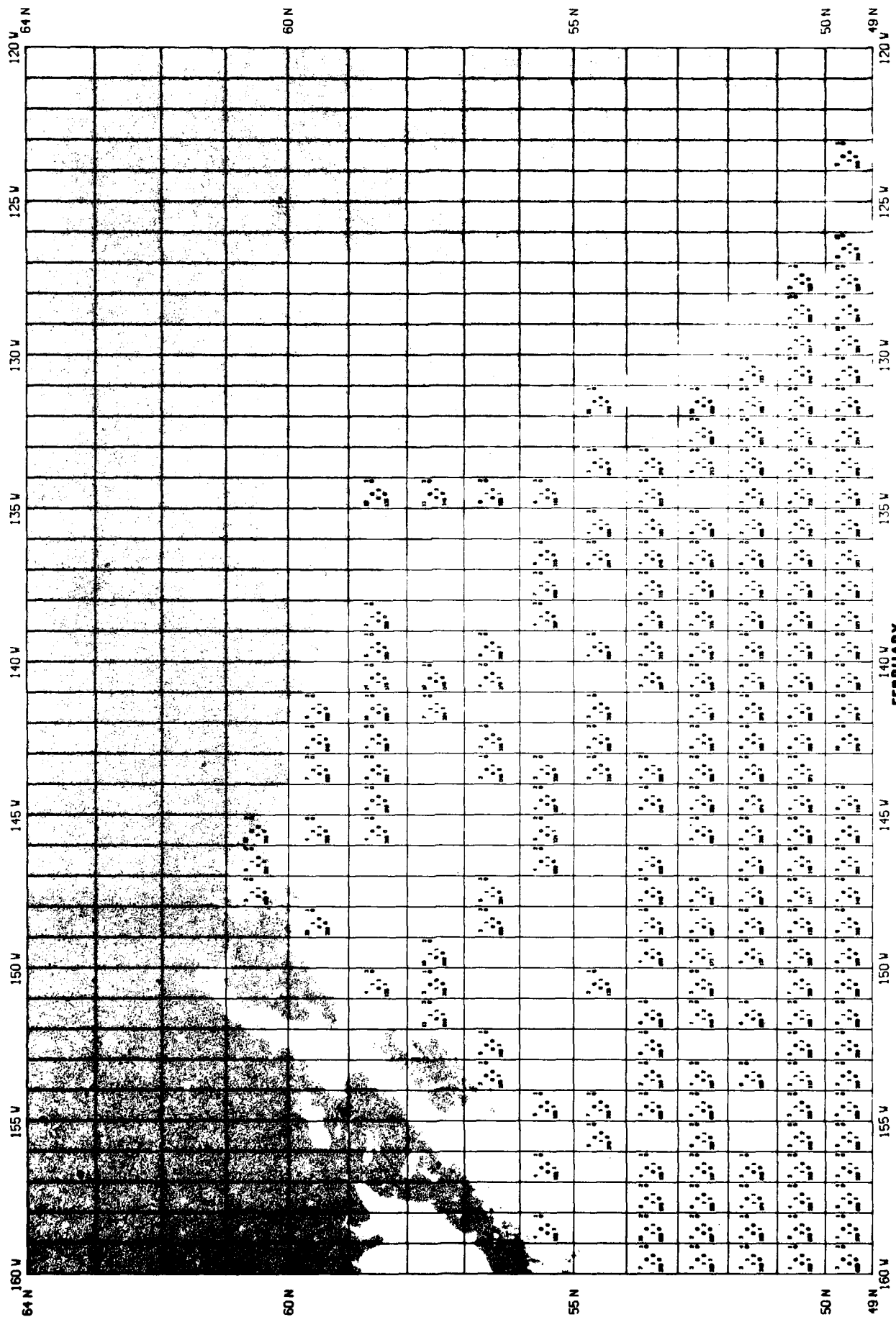


- (4) **Biconal Flow** - Practically all observations are concentrated in opposite pairs of 45° sectors, and one cluster at the opposite 80° percent elevation. The opposite pair. This generally indicates variability that occurs in zones of entrainment between opposing currents (see examples A and B, quadrangles 1, 2, and 3).

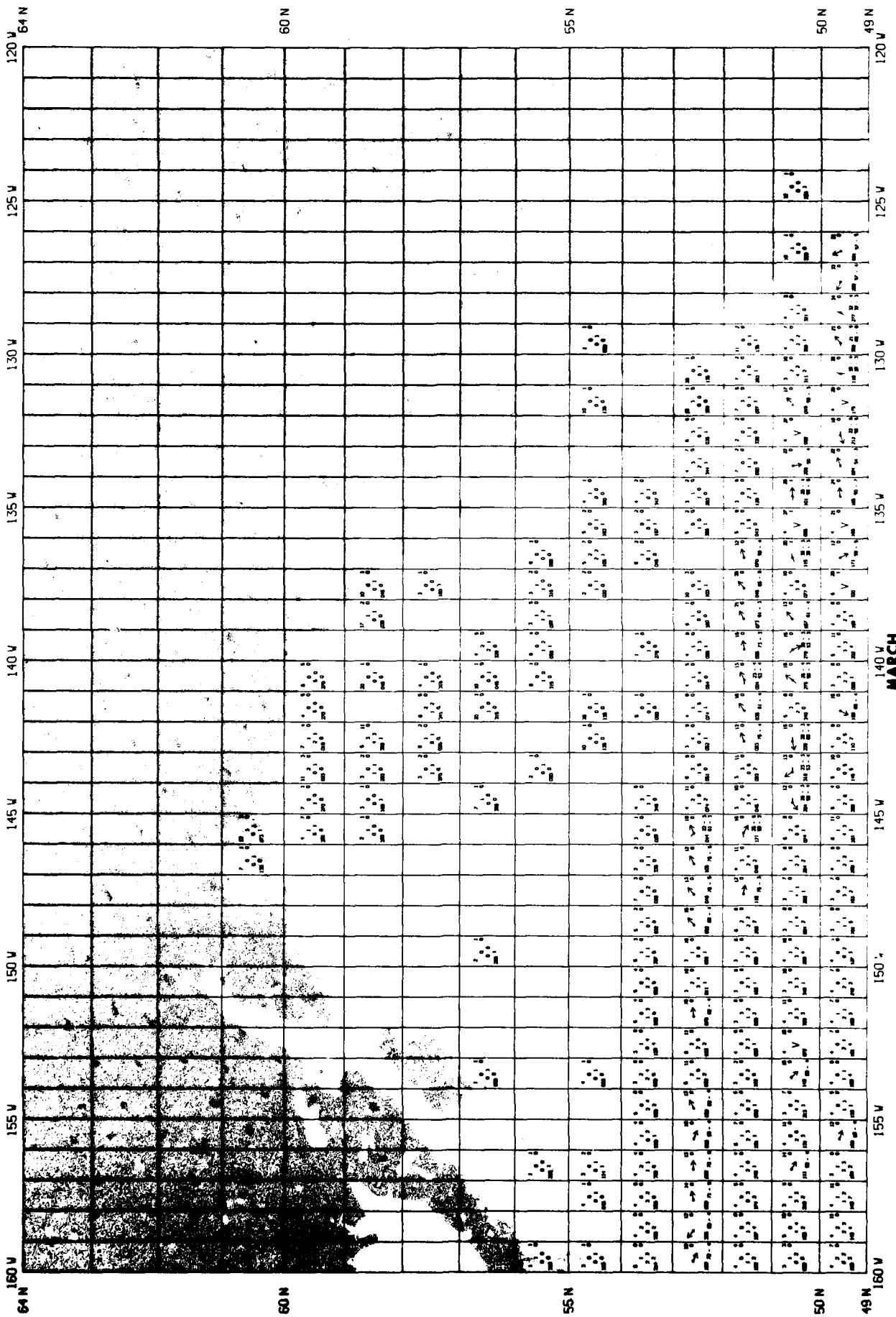


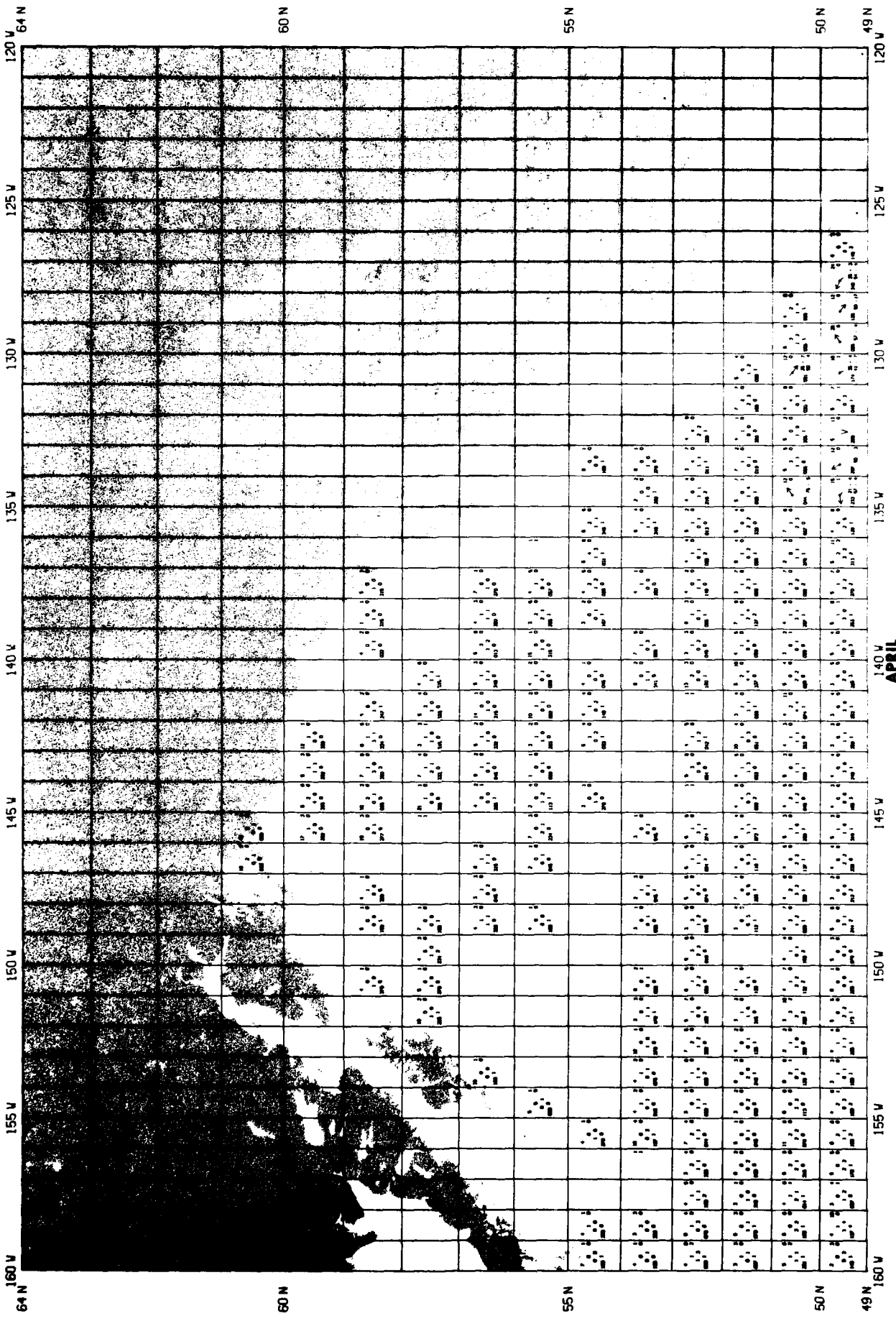


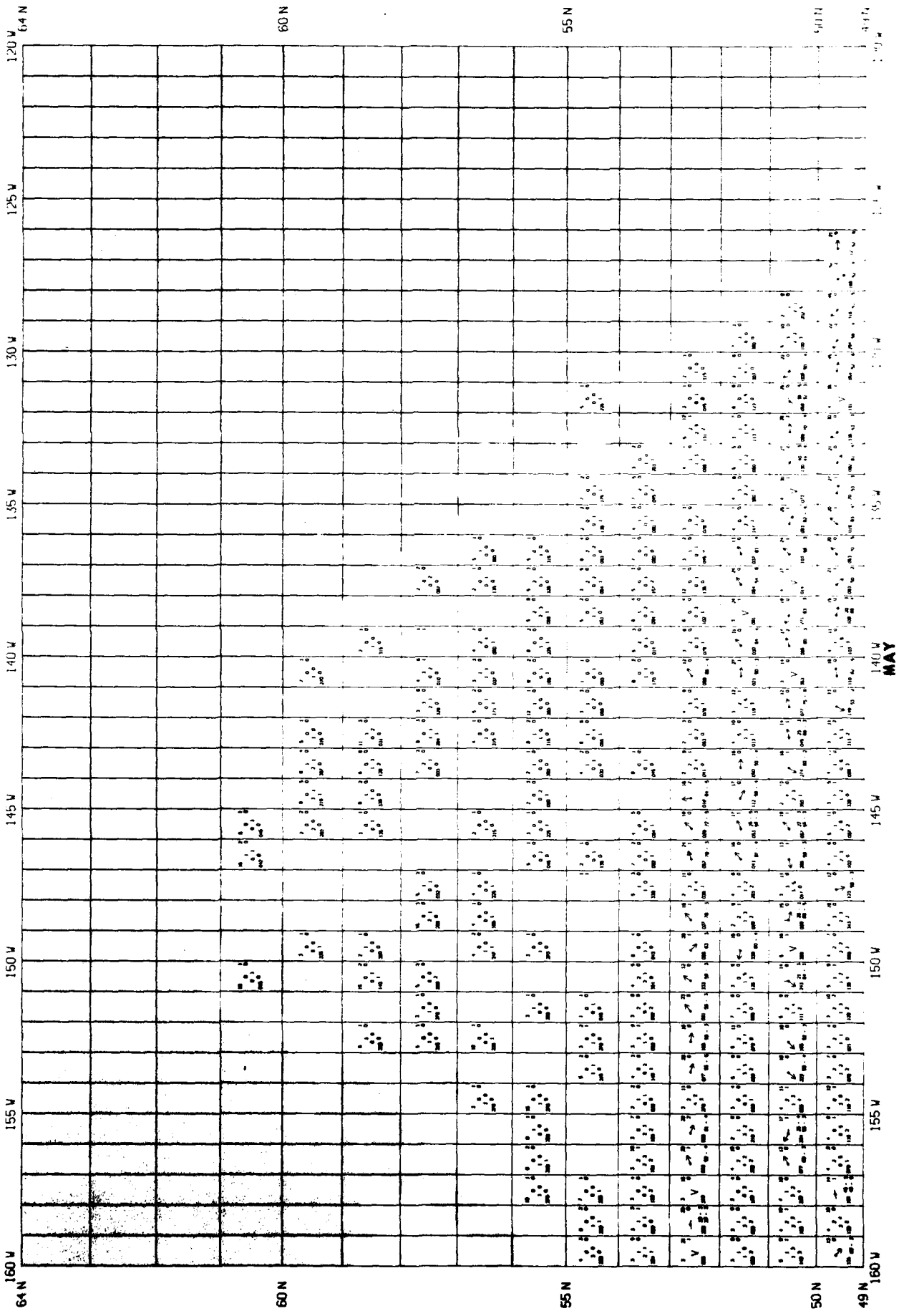
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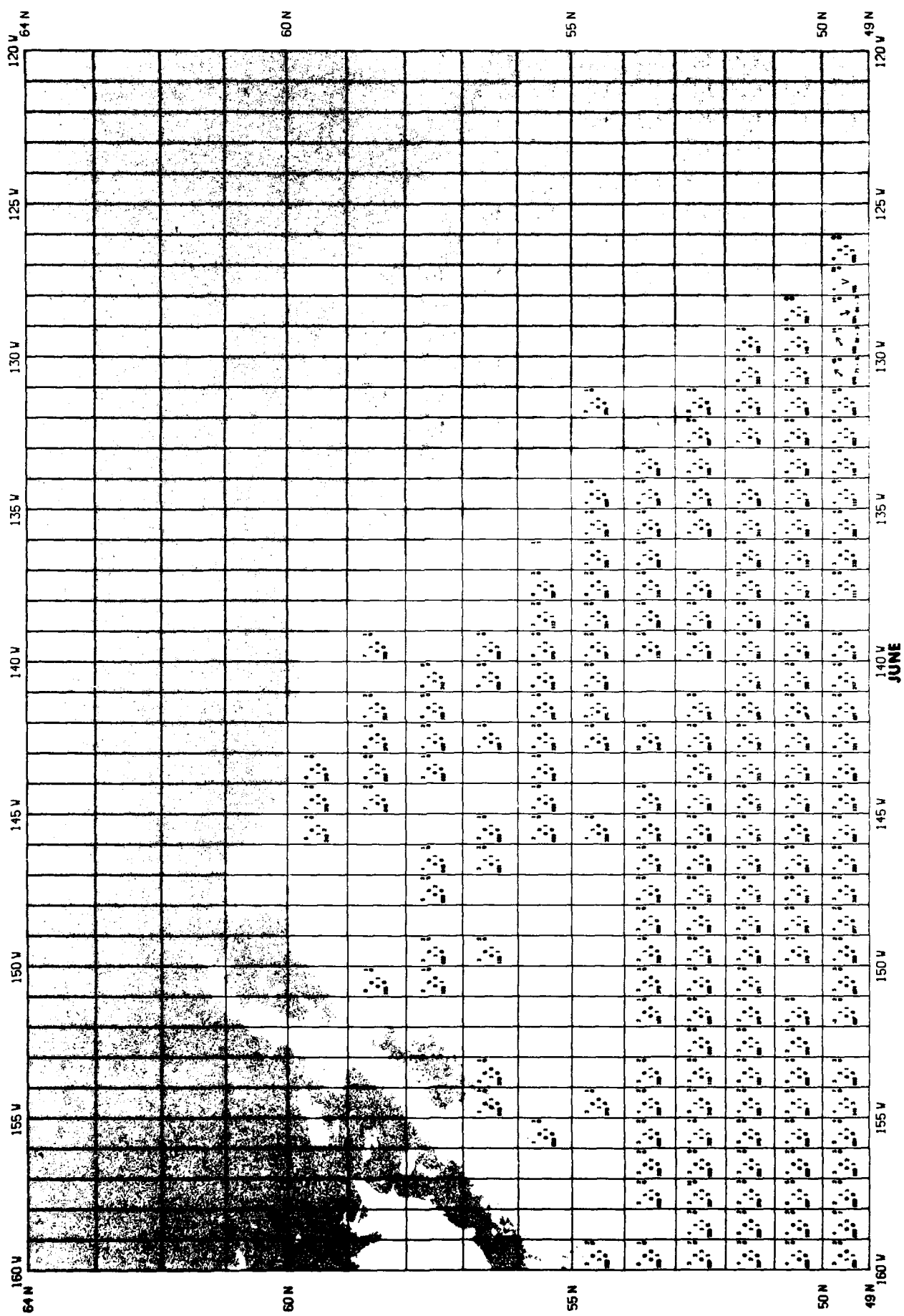


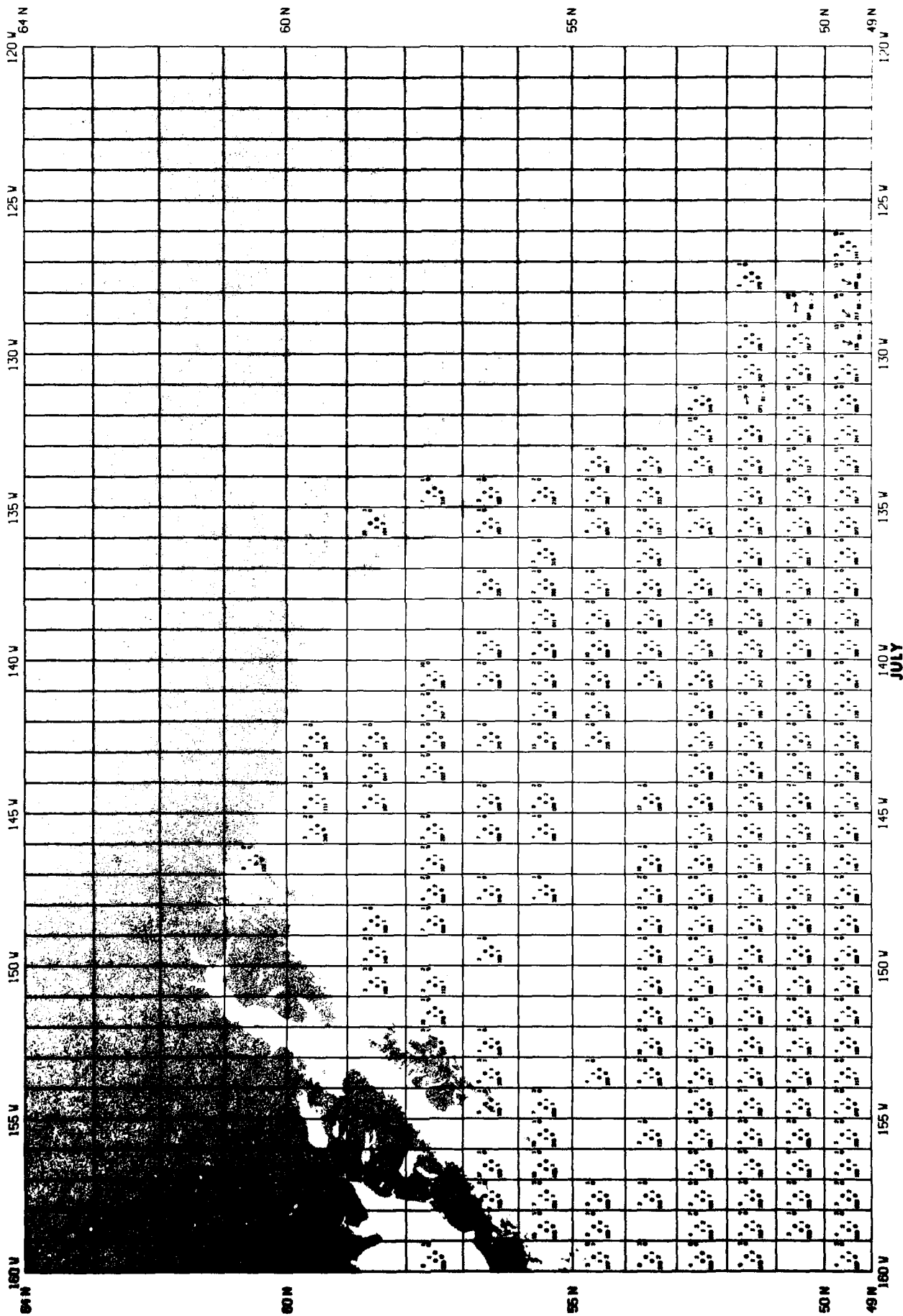
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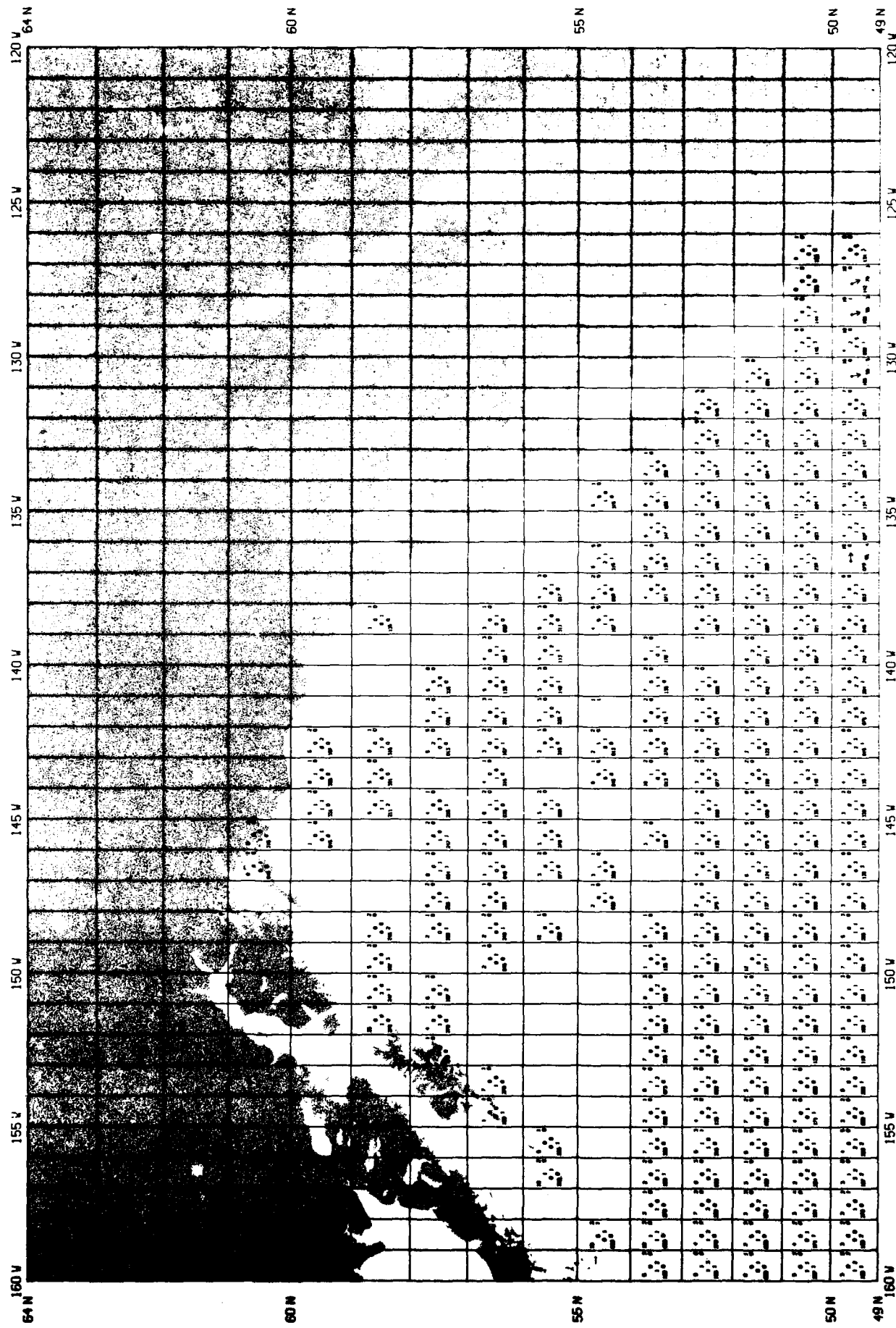




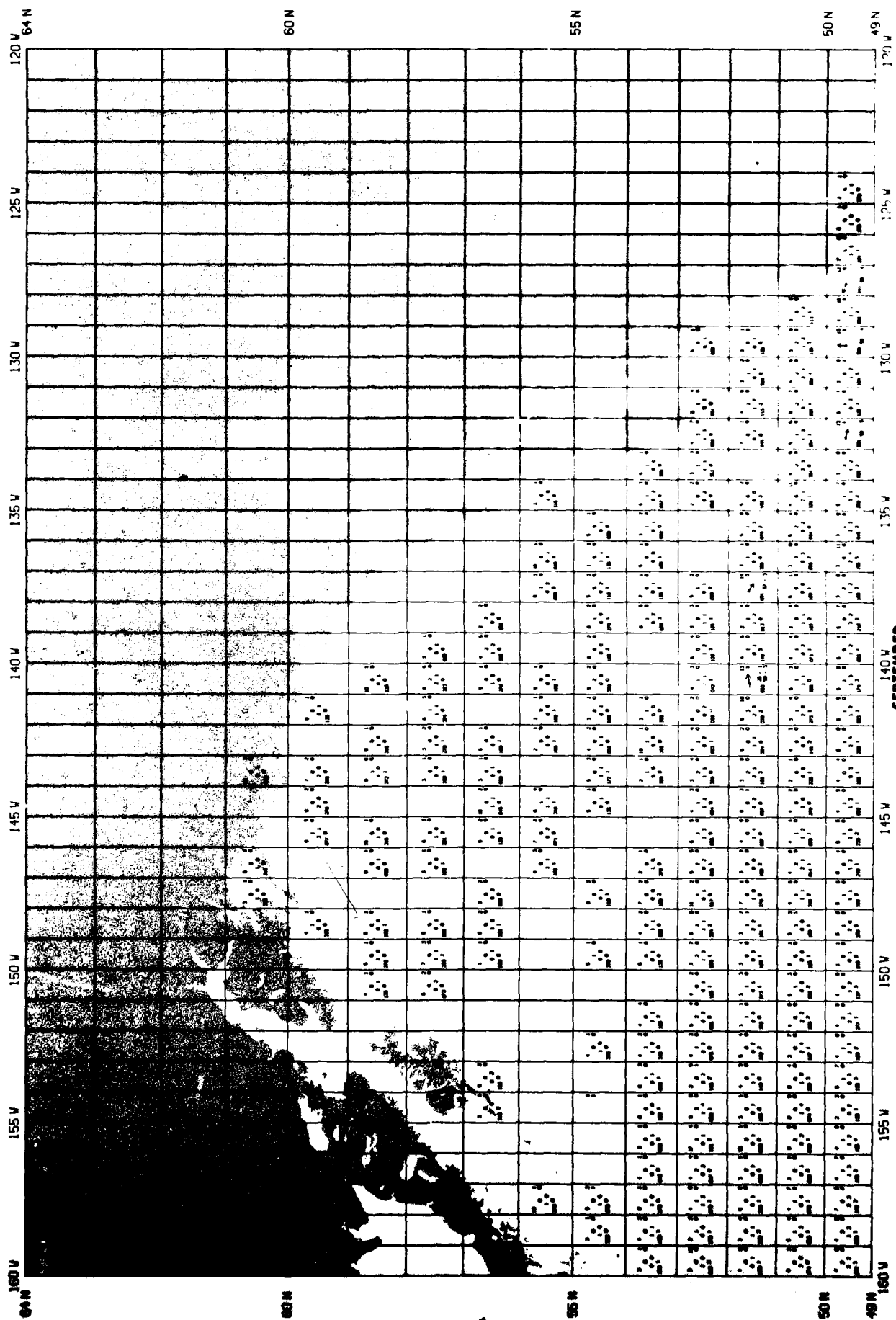


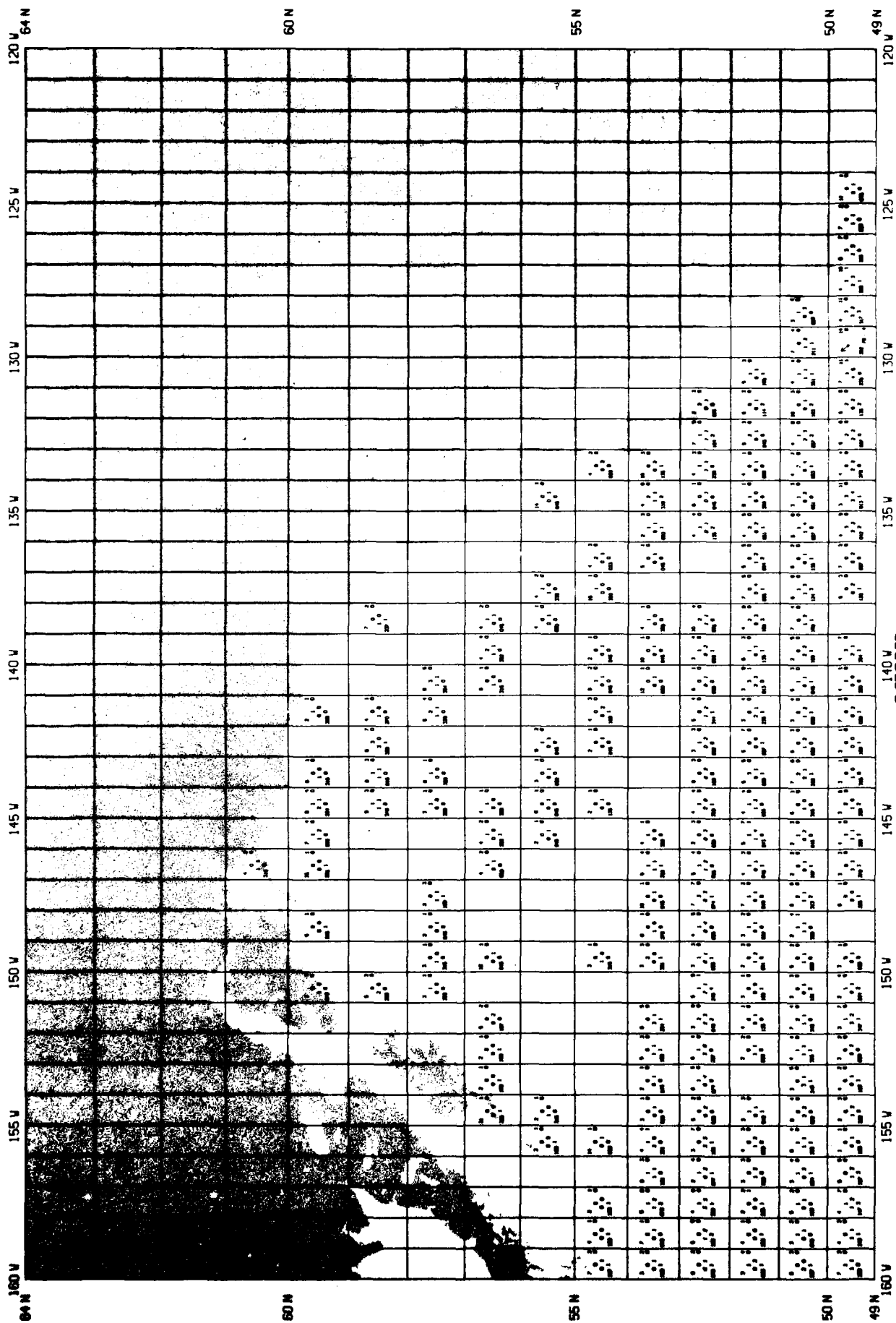




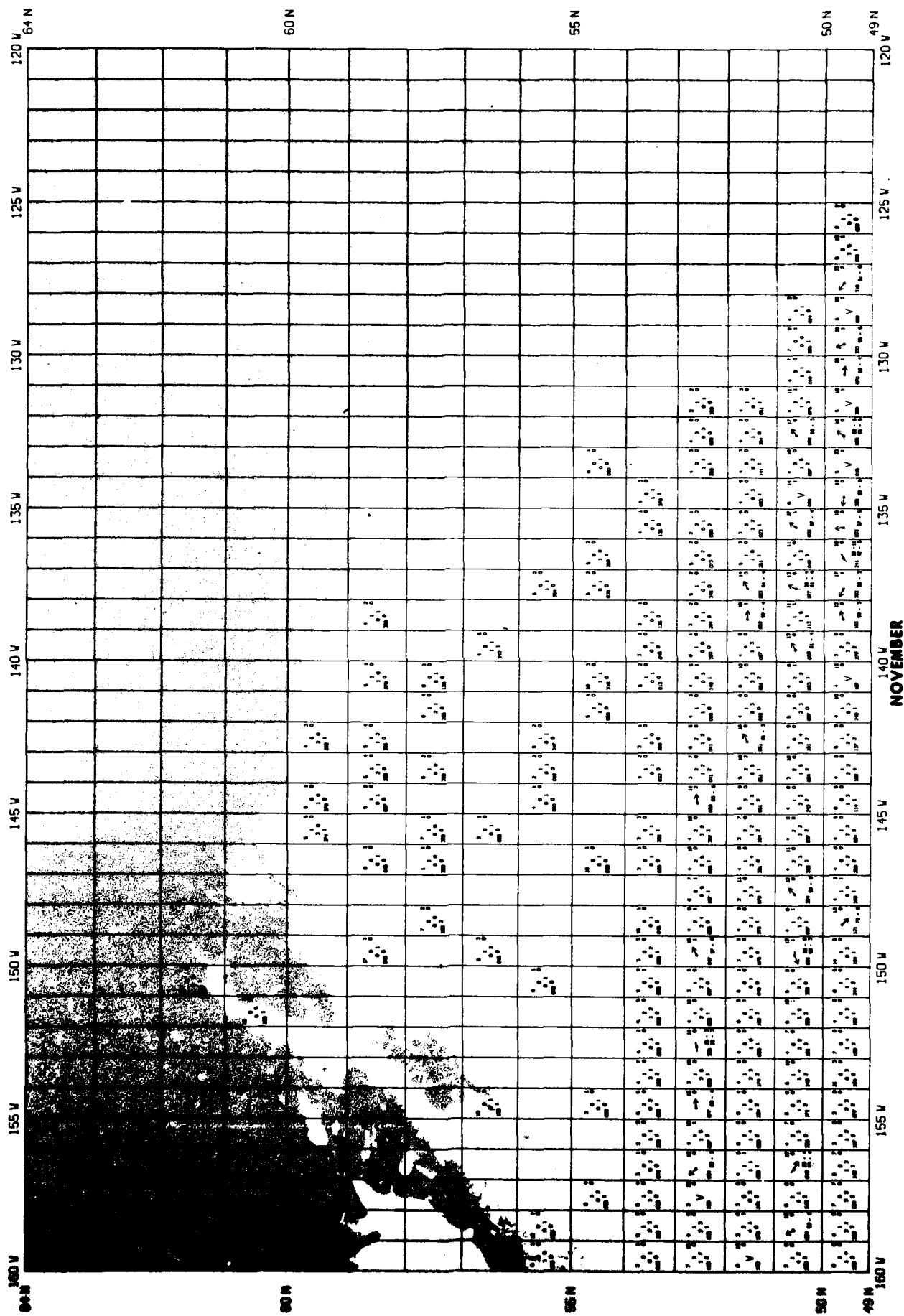


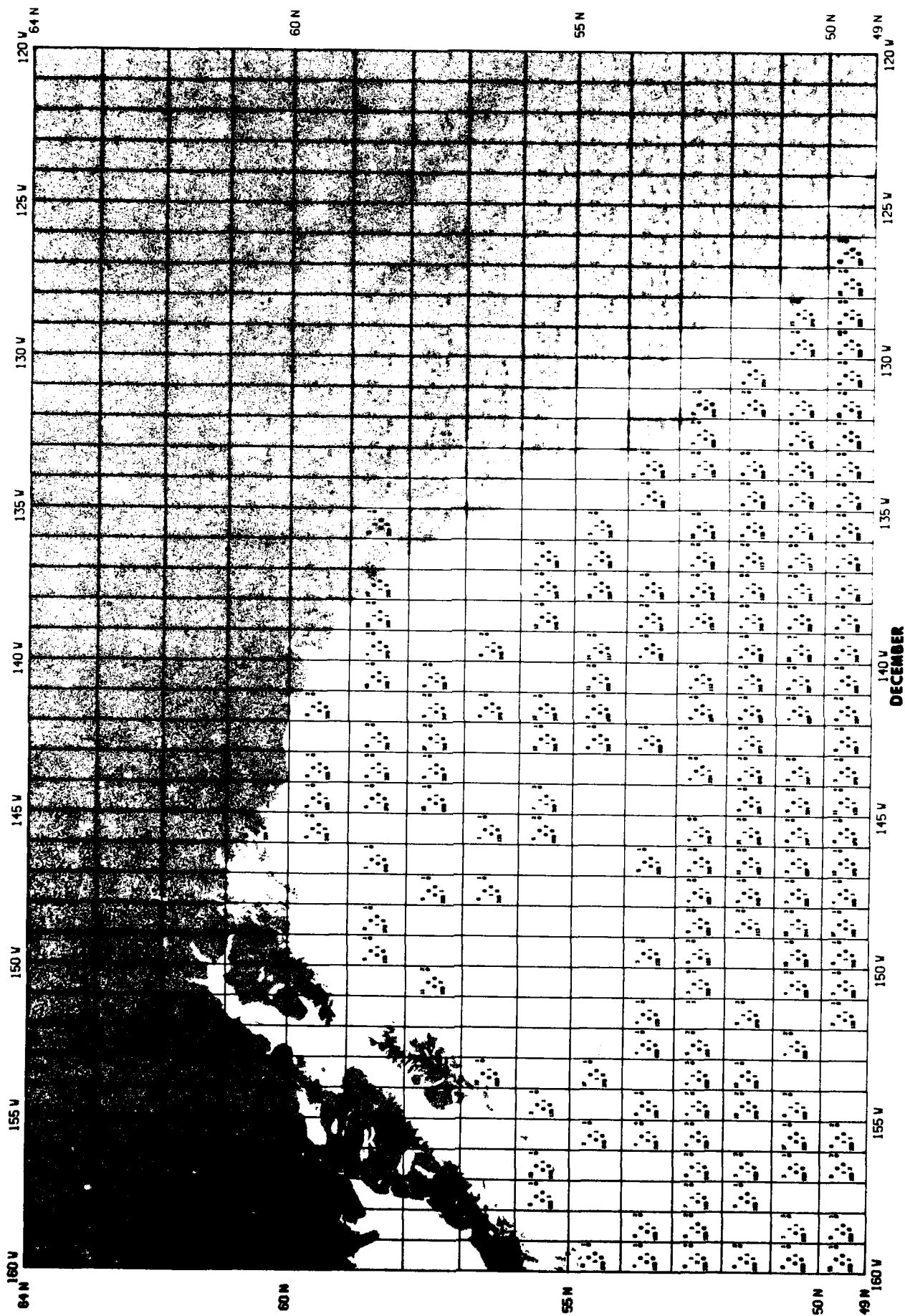
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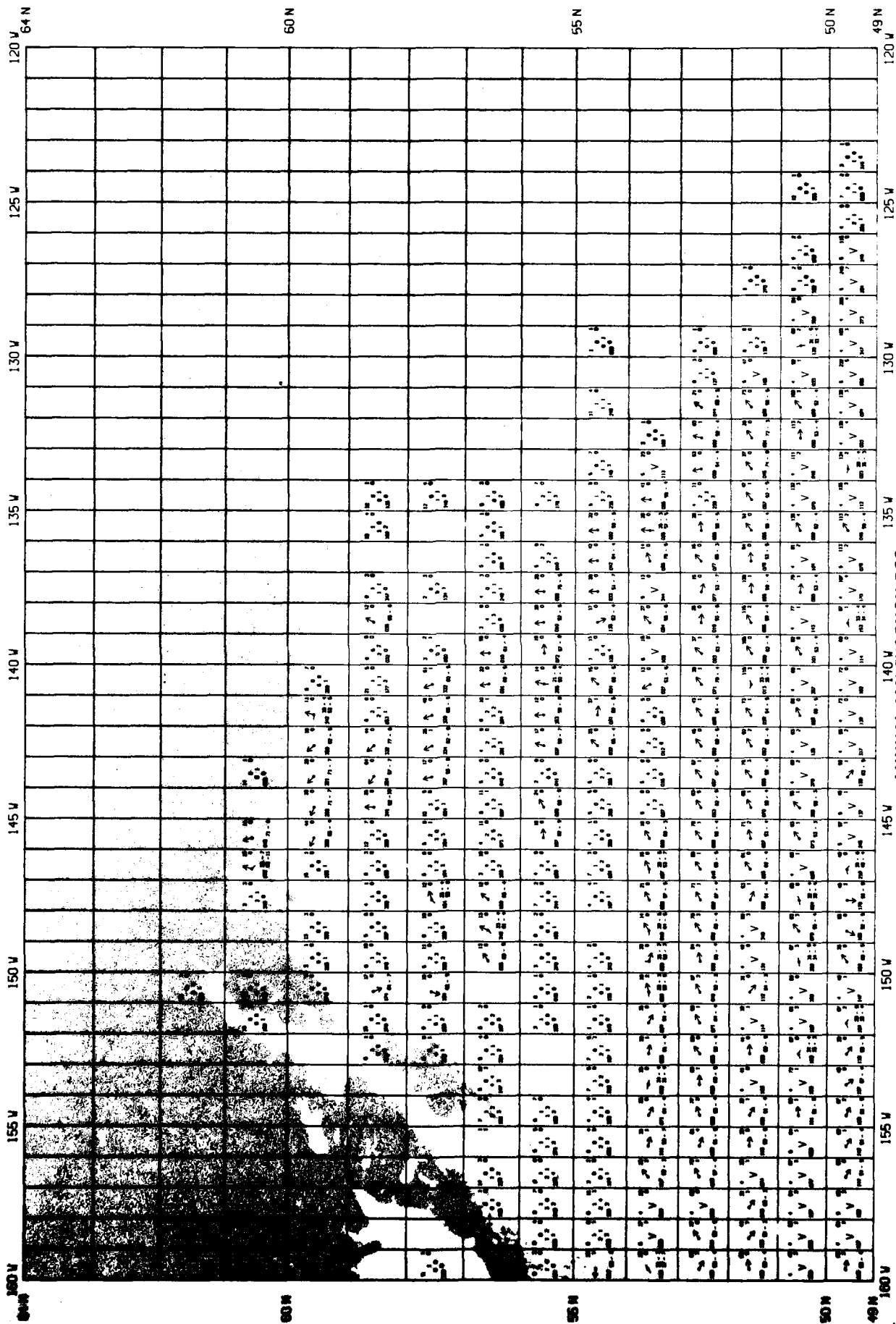


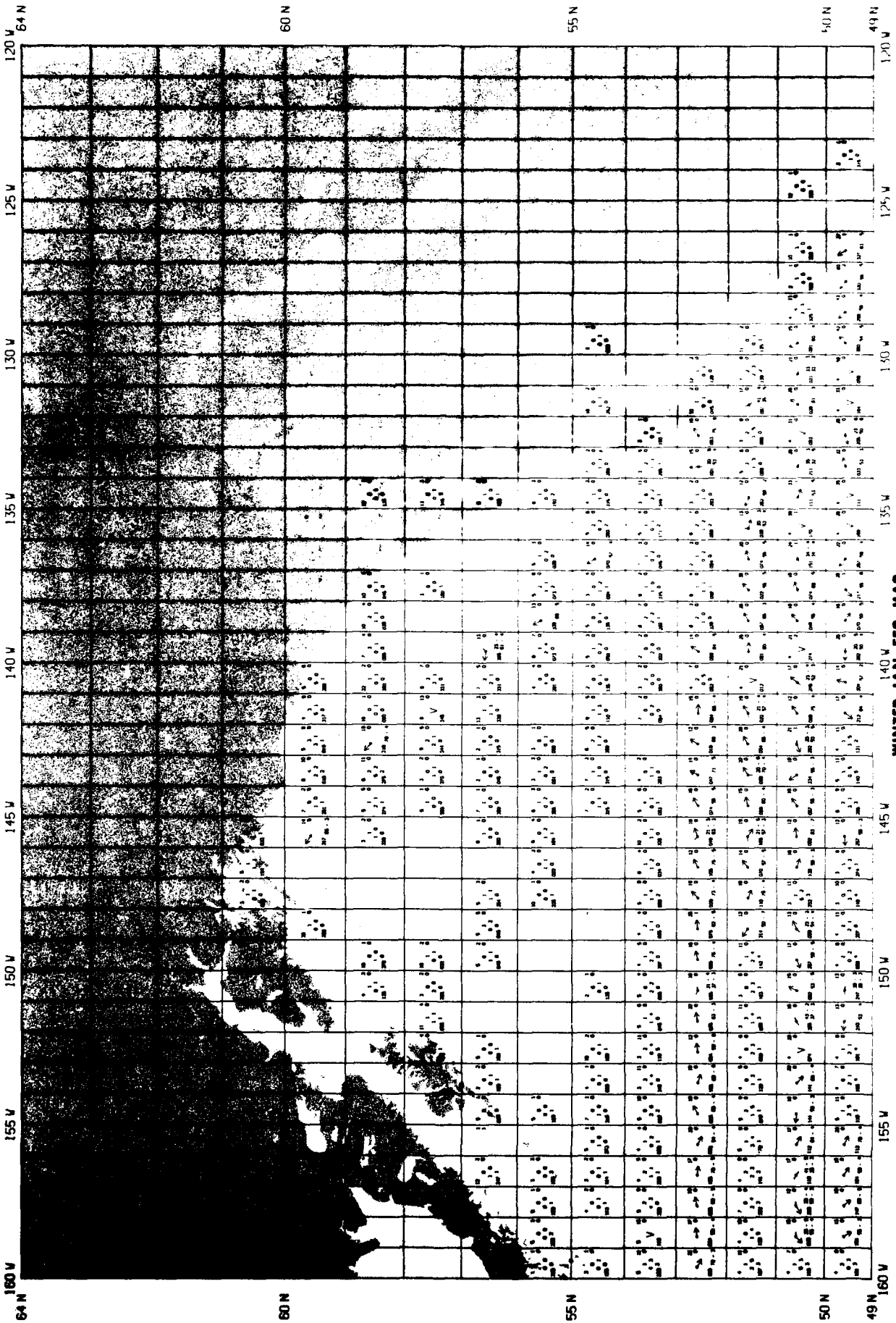


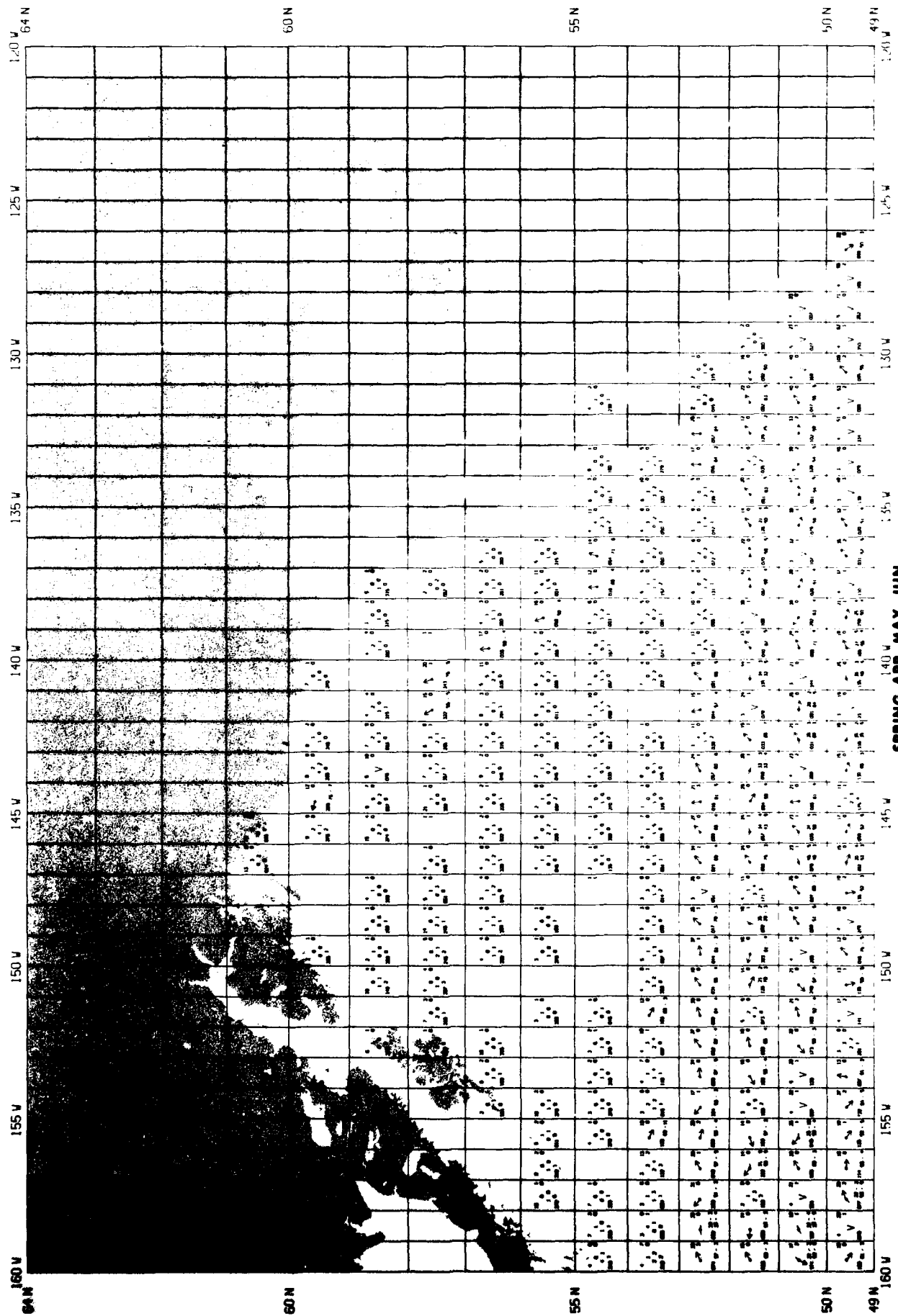
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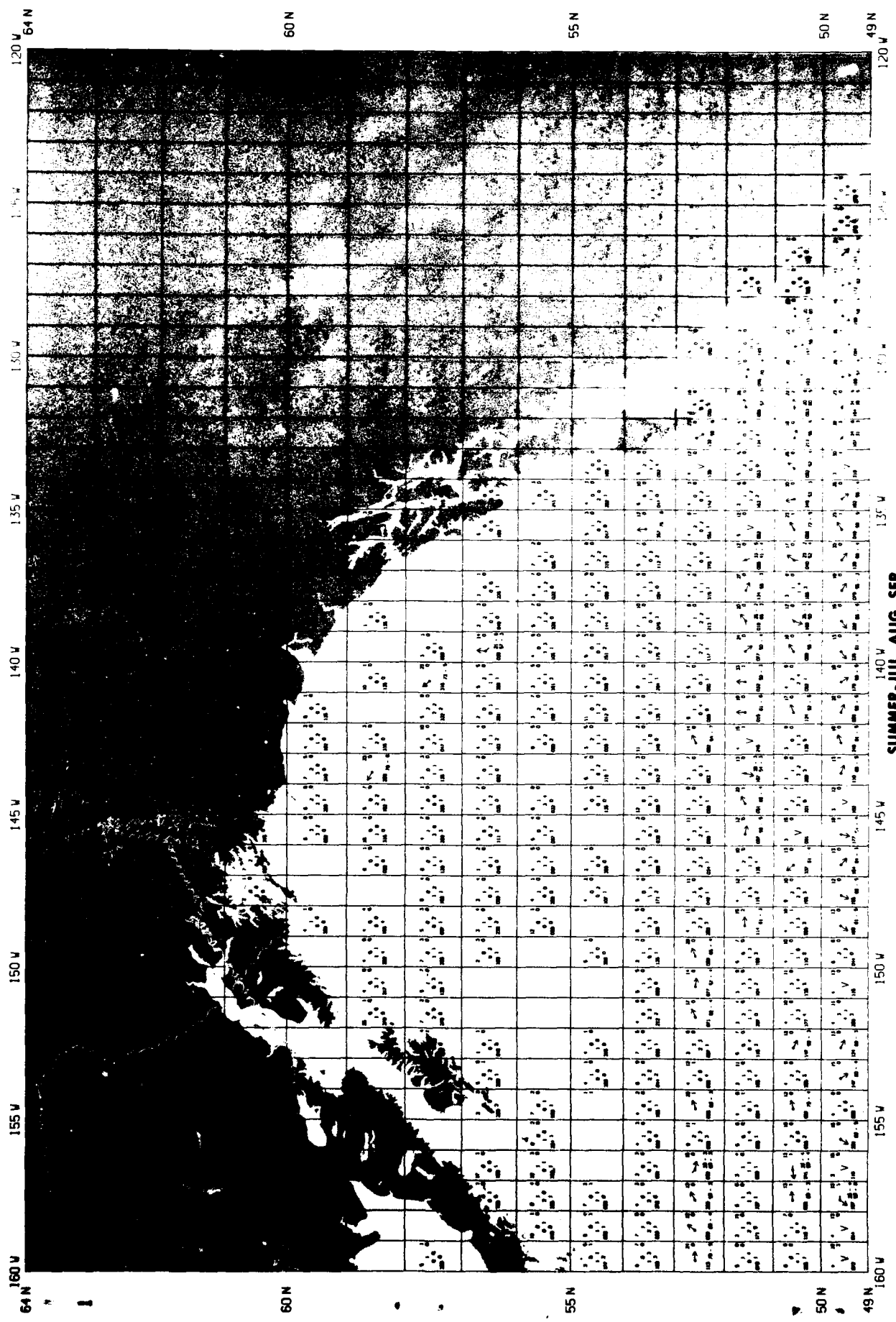




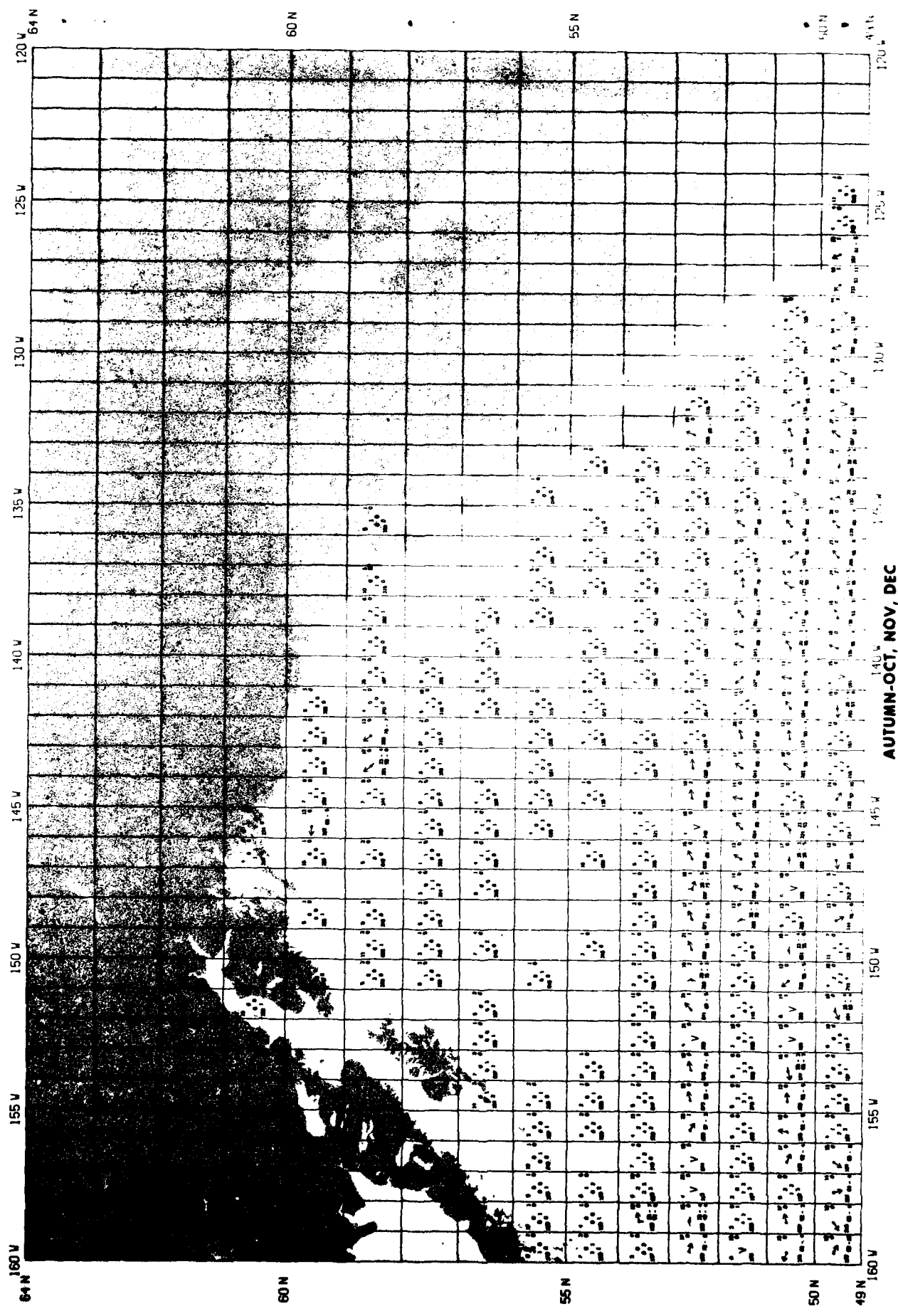




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22. ABSTRACT (Continue on reverse side if necessary and identify by block number) This atlas, and the series of which it is a part, is computer generated and automatically plotted. It makes available to the user the most recent surface current data collected and will be updated whenever sufficient amounts of data are added to the data file. This and the other atlases are based on a vast quantity of data as compared to the previous manually-compiled editions printed in the mid-thirties.			

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20. The surface current information is based mainly on ship drift, which is the difference between the dead reckoning position and the position determined by any type of navigational fix. This difference describes the direction and speed of the current.	

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